United States Patent [19]	[11] Patent Number: 4,907,583
Wetterlin et al.	[45] Date of Patent: Mar. 13, 1990
[54] DEVICE IN POWDER INHALATORS	4,147,166 4/1979 Hansen
[75] Inventors: Kjell I. L. Wetterlin, S Sandby, Sweden; Risto Virtanen, Nurmijärvi, Finland; Jan A. R. Andersson, S Sandby, Sweden	4,353,365: 10/1982       Hallworth et al.       128/203:15         4,446,862: 5/1984       Baum et al.       128/203:15         4,524,769: 6/1985       Wetterlin       128/203:15         4,570,630: 2/1986       Elliott et al.       128/203:15         FOREIGN PATENT DOCUMENTS
[73] Assignee: Aktiebolaget Draco, Lund, Sweden	2152819 8/1985 United Kingdom 128/203.15
[21] Appl. No.: 287,611 [22] Filed: Dec. 16, 1988	Primary Examiner—Angela D. Sykes Attorney, Agent, or Firm—White & Case
Related U.S. Application Data  [63]: Continuation of Ser. No. 19,057, Feb. 26, 1987, abandoned.	[57] _ ABSTRACT  Device in a previously known powder inhalator intended for inhalation of an air flow which contains
[30] Foreign Application Priority Data  Mar. 7, 1986 [SE] Sweden	pharmacologically active compound in micronized form. The powder inhalator comprises a nozzle unit (2) with a nozzle aperture (2a) as well as a container unit (3) with a releasing or dosing unit (6) for delivering the active compound. The air flow generated by inhalation is at least partly aspirated through an air conduit (7) located in the container unit (3), which conduit extends from an air inlet (8), communicating with the environ-
128/203.12; 203.15, 203.22-203.24, 204.13; 239/461, 467, 487, 489, 500-501, 518-519; 222/345, 349	ment, via said releasing or dosing unit (6), up to said nozzle unit (2). According to the invention, deflector devices are stationarily arranged in the container unit
[56] References Cited  UIS. PATENT DOCUMENTS  1,309,597 7/1919 Parker	(3) and/or in the nozzle unit (2), said deflector devices, for example in the shape of a helical channel portion (13), being arranged to create a powerful deflecting movement for the purpose of disrupting said powder

Palmer ...... 128/203.22

Miller et al. ..... 128/203.15

Bete ...... 239/501

1.431,177 10/1922

2,604,094 7/1952

2,804,341 8/1957

4/1954

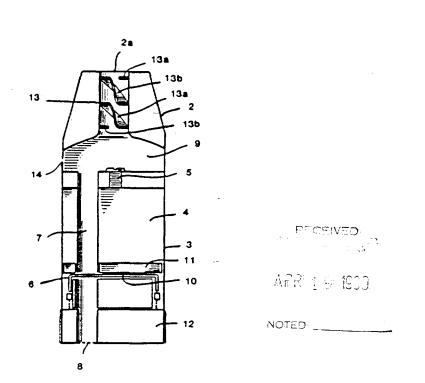
Cox .

4,014,470 3/1977 Burnham 239/487 X

2,674,999

10 Claims, 5 Drawing Sheets

particles into the respirable particle size distribution



(less than 5 µm):